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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/616,718	07/10/2003	Jerzy Bala	400100	2624

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SEYFARTH SHAW LLP
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EXAMINER	
DAYE, CHELCIE L	

ART UNIT	PAPER NUMBER
2161	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	02/01/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/616,718	BALA, JERZY	
	Examiner	Art Unit	
	Chelcie Daye	2161	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *20 November 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-4* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-4* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. This action is issued in response to applicant's amendment filed November 20, 2006.

2. Claims 1-4 are presented. No claims added and none cancelled.

3. Claims 1-4 are pending.

4. Applicant's arguments filed November 20, 2006, have been fully considered but they are not persuasive.

Continued Examination Under 37 CFR 1.114

5. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on November 20, 2006 has been entered.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. Claims 1-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kargupta (US Patent No. 6,708,163) in view of Kamath (US Patent No. 6,675,164), and further in view of "Distributed Mining of Classification Rules", by Cho and Wuthrich, Published on January 2002; referred to hereinafter as "Cho".

Regarding Claim 1, Kargupta discloses a method for distributed data mining (column 3, lines 7-9, Kargupta), comprising the steps of:

invoking agents by a mediator (Fig.8; column 3, lines 60-66, Kargupta; wherein facilitator corresponds with mediator);

beginning attribute selection (column 3, lines 20-27, Kargupta) by a plurality of agents (Fig.8, Kargupta); and

passing a best attribute (column 13, lines 18-27, Kargupta) from each of said plurality of agents to said mediator (column 28, lines 49-55, Kargupta) wherein a best attribute is an attribute having a highest information gain as between attributes found by the respective agent (column 13, lines 36-58, Kargupta)[1]. However, Kargupta is silent with respect to selecting a winning agent from said plurality of agents. On the other hand, Kamath discloses selecting a winning agent from said plurality of agents (column 14, lines 9-19, Kamath). Kargupta and Kamath are analogous art because they are from the same field of endeavor of data mining. It would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate Kamath's teaching into the

Kargupta system. A skilled artisan would have been motivated to combine in order to determine the most noteworthy agent with the appropriate data. After designating the proper information, separating the information would allow for the system to mine through a large collection of data, quicker and efficiently, causing the cost of production to decrease. Therefore, the combination of Kargupta in view of Kamath, disclose the mediator selecting the winning agent (column 29, lines 1-20, Kargupta); initiating data splitting (column 13, lines 56-60, Kamath) by said winning agent (column 14, lines 9-19, Kamath); forwarding split data index information (column 13, lines 64-66, Kamath; wherein when the list is being sorted this results in an data index) resulting from said data splitting by said winning agent to said mediator (column 14, lines 9-19, Kamath); forwarding said split data index information from said mediator to each of said plurality of agents (column 29, lines 1-20, Kargupta); and initiating data splitting by each of said plurality of agents other than said winning agent (column 14, lines 17-26, Kamath). However, the combination of Kargupta in view of Kamath, are silent with respect to generating and saving partial rules; and outputting complete rules to said plurality of agents. On the other hand, Cho discloses generating and saving partial rules (pg. 2, lines 14-18, Cho); and outputting complete rules to said plurality of agents (pg. 4, lines 24-25, Cho). It would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate Cho's teaching into the Kargupta in view of Kamath system. A skilled artisan would

[1] Examiner Notes: Maximizing the expected information gain corresponds to the highest information gain,

have been motivated to do so in order to permit the system to produce only a fractional amount of the rules, this guarantees that the found knowledge reflects the entire database because the generated knowledge is taking the data from all the sources into account. This system results in, fast-distributed data mining.

Regarding Claim 2, the combination of Kargupta in view of Kamath, and further in view of Cho, disclose a method wherein said plurality of agents include non-winning agents, and further comprising the step of:

obtaining split data index information (column 13, lines 64-66, Kamath) by said non-winning agents (column 14, lines 18-27, Kamath) from said mediator (Fig.8; column 3, lines 60-66, Kargupta).

Regarding Claim 3, the combination of Kargupta in view of Kamath, and further in view of Cho, disclose a method wherein said split data index information is compressed (Fig.5, item 123; column 21, lines 46-54, Kamath).

Regarding Claim 4, the combination of Kargupta in view of Kamath, and further in view of Cho, disclose a method for distributed data mining, comprising the steps of:

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which is a representation of the best attribute.

invoking a plurality of agents at a corresponding plurality of distributed data locations (column 23, lines 37-51, Kargupta), each of said agents identifying local attributes that split the data of corresponding local data locations into classes (column 28, lines 32-41, Kargupta);

each of said agents determining a local attribute having a highest information gain for the respective local data locations (column 13, lines 36-58, Kargupta);

forwarding the local attribute having the highest information gain for each of the local data locations to a mediator (column 29, lines 7-12, Kargupta);

selecting an attribute having a highest information gain from among the local attributes received by the mediator (column 13, lines 36-58, Kargupta), said selected attribute being considered a winning attribute (column 14, lines 9-19, Kamath);

distributing the winning attribute to said plurality of agents (column 29, lines 1-20, Kargupta) for application to the data of the local data locations to split the local data (column 13, lines 58-66, Kamath);

invoking said plurality of agents to identify further local attributes of the split data at the local data locations (column 14, lines 8-12, Kamath);

at each local data location determining the further local attributes having a highest information gain for the split data (column 13, lines 36-58, Kargupta);

forwarding the further local attributes having a highest information gain for each local data location to the mediator (column 29, lines 7-12, Kargupta);

selecting an attribute having a highest information gain from among the further local attributes received by the mediator (column 13, lines 52-55, Kargupta) to provide a further winning attribute (column 14, lines 9-19, Kamath); and

distributing the further winning attribute to each of the distributed data locations (column 29, lines 1-20, Kargupta) for application to provide further split data at the local data locations (column 13, lines 58-66, Kamath).

Response to Arguments

Applicant argues, Kargupta does not "pass a best attribute from each of set plurality of agents to said mediator".

Examiner respectfully disagrees. As stated in the office action, Kargupta discloses at column 13, lines 18-58, wherein an information gain that maximizes the results are computed and assigned to the root. Then, from the root a downward link is from a node is labeled with an attribute value to a successor node and continues down satisfying different features. The different information gains, which are computed and assigned to multiple nodes, are representations of passing a best attribute from each of the agents. Also, column 28, lines 49-55, discusses the purpose of the facilitator is to coordinate communication and flow between the agents and for routing messages between the agents. This means any data being passed by the agents are sent to the facilitator and analyzed (see column 29, lines 7-12, Kargupta). As a result, Kargupta

does disclose "passing a best attribute from each of set plurality of agents to said mediator".

Applicant argues, Kargupta does not disclose, "selecting a winning agent from a plurality of agents based on a best attribute obtained from each of the agents".

Examiner respectfully disagrees. In regards to applicants argument that Kargupta does not disclose the limitation of "selecting a winning agent from a plurality of agents, based on a best attribute obtained from each of the agents", is invalid. One cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). Specifically, the Kargupta reference was not relied upon for disclosing the limitation of "selecting a winning agent from a plurality of agents", however the combination of Kargupta in view of Kamath were relied upon for the disclosure of the claimed subject matter. In particular, the Kamath reference was relied upon for the explicit disclosure at column 14, lines 9-19, which details optimal splitting process in order to produce a winning agent/processor.

Applicant argues, Kamath does not disclose, "selecting a winning agent".

Examiner respectfully disagrees. As stated in the office action, Kamath discloses at column 14, lines 9-19, wherein the system finds the optimal split point of each processor, by evaluating each of the features within the list and selecting the best split.

Then communicates the best split to all of the other processors. As the system finds the winning feature to produce a best split and communicates the results to the other processors, the system is automatically aware of what processor contained/produced the best feature. As such, examiner believes the combination of Kargupta in view of Kamath, disclose the claim limitation of "selecting a winning agent".

Applicant argues, Cho does not disclose the steps of "initiating data splitting by a winning agent and sending the split data index information resulting from that data splitting to initiate data splitting by the other agents".

Examiner respectfully disagrees. Applicant's argument with regards to the Cho reference not disclosing the step of "initiating data splitting by a winning agent" is invalid. Again, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). Specifically, the Cho reference was not relied upon for disclosing the limitation of "initiating data splitting by a winning agent", however the combination of Kargupta in view of Kamath, and further in view of Cho were relied upon for the disclosure of the claimed subject matter. In particular, the Kamath reference was relied upon for the explicit disclosure at column 13, lines 56-63, which detail the sorting/splitting process. Further details are also found within the Kamath reference at column 14, lines 16-19. Also, with regards to applicants argument that the Cho reference does not disclose the newly amended limitation of sending the split data index

information resulting from that data splitting to initiate data splitting by the other agents have been considered but are moot in view of the new ground(s) of rejection.

Points of Contact

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chelcie Daye whose telephone number is 571-272-3891. The examiner can normally be reached on M-F, 7:00 - 4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jeffrey Gaffin can be reached on 571-272-4146. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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January 5, 2007

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